



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,187	02/19/2002	Shunpei Yamazaki	SEL 304	5420
7590	08/10/2004		EXAMINER	
COOK, ALEX, MCFARRON, MANZO, CUMMINGS & MEHLER, LTD. Suite 2850 200 West Adams St. Chicago, IL 60606			ROY, SIKHA	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/078,187	YAMAZAKI ET AL.
	Examiner Sikha Roy	Art Unit 2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 May 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-41 and 67-81 is/are pending in the application.  
 4a) Of the above claim(s) 42-66 is/are withdrawn from consideration.  
 5) Claim(s) 19-41 and 69-71 is/are allowed.  
 6) Claim(s) 1-18,67,68 and 72-81 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 27 May 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

The Amendment, filed on May 27, 2004 has been entered and overcomes the rejection of claims 19 – 32, 69 and 70, under 35 U.S.C. § 103(a).

The new drawing of Fig. 15 has been entered and is approved by the Examiner.

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

--DISPLAY DEVICE WITH SEALING STRUCTURE FOR PROTECTING  
ORGANIC LIGHT EMITTING ELEMENT--.

Claim 33 is objected to because of the following informalities:

Claim 33 line 9, 'second insulating provided' should be replaced by --second insulating film provided--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2, 5-8, 67, 68, 72, 74,75 and 81 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,303,963 to Ohtani et al.

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1 Ohtani discloses (column 24 lines 19-56, column 25 lines 1-15,29-54 Fig. 16B) an EL display device comprising a pixel portion comprising first electrode (pixel electrode) 4027 formed over the first substrate 4010, a first insulating film 4028 formed so as to cover an end of the first electrode, a light-emitting organic compound film 4029 formed over the first electrode 4027 and in contact with a side face of the first insulating film, a second electrode 4030 formed over the light-emitting organic compound film 4029, a second insulating film 4026 formed over the periphery of the first substrate 4010 and surrounding the pixel portion, an adhesive layer 6004 formed on the second insulating film, a second substrate 6000 in contact with the adhesive layer and light-emitting element comprising the light-emitting organic compound film interposed between the first and second electrodes. Ohtani further discloses (column 25 lines 37,38) the first insulating film 4028 and second insulating film (insulating film 4026 along with the top portion) comprise same material.

Regarding claim 2 Ohtani discloses all the limitations same as claim 1.

Additionally Ohtani discloses (Fig. 16B) the second substrate 6000 provided so as to overlap the first and second insulating films and a gap between the first substrate 4010 and second substrate 6000 is filled with an adhesive layer 6004.

Referring to claims 5 and 6 Ohtani discloses a protection layer (passivation film) 6003 covering the second electrode 4030, the first insulating film 4028 and the second insulating film (insulating film 4026 along with the top portion).

Regarding claims 7 and 8 Ohtani discloses first substrate and second substrate made of glass.

Regarding claims 67 and 68 Ohtani discloses (column 31 lines 29-40, Figs. 11A to 11F) that this display devices can be incorporated into an electronic equipment selected from group consisting of video camera, cellular phone, portable computers.

Referring to claim 72 Ohtani discloses all the limitations which are same as claim 1 and additionally discloses (Figs. 16B column 24 lines 30-41) the second insulating film 4026 formed over the driver circuit 4022 and surrounding the pixel portion.

Claims 74,75 and 81 essentially recite the same limitations as of claims 5,7 and 67 respectively and hence are rejected for the same reasons (see rejections of claims 3,5 and 67).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 11, 12, 17, 18, 73, 77 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,303,963 to Ohtani et al.

Regarding claims 3 and 4, Ohtani discloses the claimed invention except for the limitation of width of the second insulating film being between 100 to 5000 $\mu$ m. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the width of the second insulating film between 100 to 5000 $\mu$ m, since optimization of workable ranges is considered within the skill of the art.

Regarding claims 11 and 12, Ohtani discloses the claimed invention except for the limitation of thickness of the adhesive layer being between .05 to .5 $\mu$ m. It is to be noted that the thickness of the adhesive layer affects the viewing angle and hence the thickness of the adhesive layer must be such that lowering of light transmittance is prevented. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in

the art. *In re Aller*, 105 USPQ 233. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the thickness of the adhesive layer between .05 and .5 $\mu$ m, so that there is enhanced light transmittance with effective sealing of the display.

Regarding claims 17 and 18 Ohtani discloses the first insulating film which is of same material as the second insulating film made of resin.

Claims 17,18 differ from Ohtani in that Ohtani does not disclose the first insulating film comprising any one of polyimide resin, acrylic resin and polyamide resin film.

Ohtani discloses (column 8 lines 46-58) interlayer insulating film formed of organic resin film comprising polyimide, acryl, polyamide resins. Ohtani further discloses these organic resin films provide advantages such as simple film formation method, reduction of parasitic capacitance since relative dielectric constant is low and superior flatness.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the resin insulating film of Ohtani made of polyimide, acryl or polyamide organic resins for providing advantages such as simple film formation method, reduction of parasitic capacitance since relative dielectric constant is low and superior flatness.

Claims 73, 77 and 80 essentially recite the same limitations as of claims 3,11 and 17 respectively and hence are rejected for the same reasons (see rejection of claims 3,11 and 17).

Claims 9, 10 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,303,963 to Ohtani et al. and further in view of U.S. Patent 6,559,594 to Fukunaga et al.

Claims 9 and 10 differs from Ohtani in that Ohtani does not disclose the gap between the first substrate and the second substrate filled with an inactive gas or nitrogen.

Fukunaga in same field of endeavor discloses (Fig. 4D column 9 lines 1-10) the gap between the first and second substrates is filled with nitrogen gas or noble gas. It is further disclosed that this material (nitrogen gas) absorbs oxygen or moisture in the space thus providing a reliable light source.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to fill the gap between the first and second substrates of Ohtani with nitrogen gas as suggested by Fukunaga for absorbing oxygen or moisture in the space and thus providing a reliable light source.

Claim 76 essentially recite the same limitation as of claim 9 and hence is rejected for the same reason.

Claims 13-16 and 78,79 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,303,963 to Ohtani et al. and further in view of U.S. Patent 6,380,672 to Yudasaka.

Referring to claims 13-16 Ohtani fails to disclose the first and second insulating films having thickness of 1.0 to 10 $\mu$ m.

Yudasaka in analogous art of active matrix display discloses (column 12 lines 35-52) the bank (first insulating film) has a thickness of 1 to 2  $\mu\text{m}$ . Yudasaka discloses that such a thick layer bank sufficiently functions as a barrier and defines the region that forms the organic semi-conductive film when the film is formed by a coating process.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to select the thickness of the first and second insulating films of Ohtani of 1 to 2 $\mu\text{m}$  as suggested by Yudasaka for functioning as barrier and defining the region for forming organic film in between.

Claims 78 and 79 essentially recite the same limitations as of claims 13 and 15 respectively and hence are rejected for the same reasons (see rejections of claims 13, 15).

#### ***Allowable Subject Matter***

Claims 19-41 and 69-71 are allowed over the prior art of record.

The reasons for allowing claims 33-41 and 71 have already been cited by the examiner in the previous action.

Referring to claim 19 the prior art of record neither teaches nor suggests a display device having all the limitations as claimed in claim 19 and particularly the limitation comprising a second insulating film provided in convex manner on the upper face and in contact with a portion of the first insulating film.

Claims 31 and 69 are allowed because of their dependency status from claim 19.

Referring to claim 20 the prior art of record neither teaches nor suggests a display device having all the limitations as claimed in claim 20 and particularly the

limitation comprising a third insulating film provided in convex manner on the upper face and in contact with a portion of the first insulating film.

Claims 21-30,32 and 70 are allowed because of their dependency status from claim 20.

### ***Response to Arguments***

Applicant's arguments filed May 27, 2004 regarding claims 1,2 have been fully considered but they are not persuasive.

In response to Applicants' argument regarding claims 1 and 2, that Ohtani does not disclose or suggest the second insulating film surrounding the pixel portion the Examiner respectfully disagrees. Ohtani discloses in Fig. 16B the second insulating film 4026 formed over the periphery of the first substrate, surrounds (extending around the margin or edge of the pixel) the pixel portion comprising TFT 4023, first (pixel) electrode 4027, organic EL layer 4029 and second electrode 4030.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sikha Roy  
Patent Examiner  
Art Unit 2879

  
NIMESHKUMAR D. PATEL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800